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THE RELATION OF FEELING TO DISCRIMINATION AND CONCEPTION

IT is a common theory that for purposes of explanation mental processes may be reduced to two classes of elements, sensation and affection, of which the sensation class, at least, is considerable in number. Two difficulties are at once apparent. In the first place we have little right to assume a manifold of elements. Secondly, to treat sensation and affection as coordinate classes of elements is no solution of their relation to each other.[1] My belief is that feeling is not coordinate with sensation, but is the common ground between any two sensations. It is the generic or unifying principle of consciousness to which sensation is subordinate, and is, therefore, the really elemental aspect of mental life.

There can, logically, of course, be only one final element, since opposites always have common ground. The criterion of an element is simplicity and unanalyzableness, and the limit of analysis is pure and simple quality. The view which adopts a manifold of initial qualities leads eventually to the Münsterberg[2] theory of psychical atoms. This theory argues that a psychical atom can never be given in immediate experience, and is not measured by time space and intensity. Each atom, however, is perfectly unique and dissimilar from every other; for if the atoms had any resemblance one to another they must of necessity be composed of parts (since similarity means partial identity). Each atom is, then, a unique quality. The objection is that an atom can not be simple and at the same time dissimilar from a great many other things. A many-sided dissimilarity means a highly differentiated organization; if we have a thousand objects each differing from every other, we must have within each

[1] Cf. Titchener, 'Outlines of Psychology,' chap. 9, p. 214: 'The feeling stands on the same level of mental development as the perception or idea'; p. 219: 'The emotion stands upon the same level of mental development as the simultaneous association of ideas'; p. 233: 'The mood stands upon the same level of mental development as the train of ideas.'

[2] *Psy. Rev.*, Vol. VII., p. 1.

one of them nine hundred and ninety-nine grounds of distinction. Any added point of difference is an added point in inner complexity. Pure quality is for consciousness a homogeneity, not a plurality. The mental element in this sense is equivalent to James's blooming, buzzing confusion, to Ward's[3] continuum, to Stanley's[4] primitive inarticulate pain, to Horwicz's[5] elementary feeling process.

The form of consciousness which answers to the logical demands of an element is emotion or affection.[6] Affection or feeling I should define as pure quality, a thing homogeneous and devoid of internal relation, every part of it interchangeable with every other part, a simple identity. The following considerations are offered in support of the idea that feeling is a state of indiscrimination, that its content is homogeneous. (1) Popular usage has it that one is 'confused or perturbed by emotion,' 'blinded by passion,' that 'pity melts and feeling sweeps over us,' that 'love is the leveler of distinctions,' that 'the sympathy by which we put ourselves in the place of others is simply the obliteration of the difference between ourselves and others.' (2) Introspectively feeling for a given thing is simple and unanalyzable as compared with the perception of that thing. When I feel that I can play a certain musical composition that feeling is perfect and complete, though it should last only an instant; but when I perceive that I can play, the operation takes several minutes packed with the apprehension of tones and their sequences, times, intensities and harmonies. In the feeling of mastery I am not conscious of the number of times I have practised, nor of how the individual notes run, nor of all the muscle flexing which is required. The feeling is the simple undercurrent which would accompany the words 'I can play that.' (3) Feeling is our ultimate measure of values and as such must be homogeneous in content. Suppose a man slightly afraid to walk down a certain dark street. He will grasp his cane more tightly and go on. But if he is very much afraid he will go another way. The objective results of these two states are qualitatively disparate, but the meaning of the results can be compared by reference to the two states of feeling which were qualitatively alike but quantitatively different.

Another way of stating our definition of feeling is to call it the continuity of consciousness. The postulate of continuity we may express in this way: no two things can exist in consciousness so totally different but that some common ground may be found between them,

[3] Art. 'Psychology,' Encyc. Brit., p. 45.

[4] *Phil. Rev.*, Vol. I., p. 433.

[5] *Psychologische Analysen*, Bd. XIV., p. 351.

[6] I use feeling, affection and emotion interchangeably because I believe them to have the same function.

and no two things are so nearly alike but that we can imagine some point between them which would partake of the nature of each, *i. e.*, we recognize always the possibility of still finer discriminations than the ones which we at any time make. In Stout's language, "We have not merely *A* and then *B*, but also the passage of *A* into *B;* and this passage as such is a modification of consciousness. The transition is itself an experience."[7] It is feeling which effects this transition, which is the continuum of thought. What, then, is its relation to the dividing and combining activities of mind to discrimination and conception? I shall consider here the relation of feeling to discrimination, reserving the consideration of its relation to conception for a subsequent paper.

The discernment of difference is frequently pronounced the most fundamental act of consciousness.[8] Concerning what takes place in the process of discrimination most writers have been content to say that there is an analysis or singling out of parts in a whole. There have, however, been attempts at a more elaborate treatment. Sully, for example, tries to separate discrimination from differentiation by making differentiation a preparatory stage for discrimination. He says: "*A* and *B* must be presented and noted as two distinct impressions before we become conscious of the relation *A–B*. This applies to all intellection as a relational and relating process. The mental apprehension of a relation of difference, likeness or succession in time must be carefully distinguished from the experience of having two unlike, like or successive impressions."[9] The same idea appears in Wundt: "The erroneous view still finds frequent acceptance that the existence of psychical elements and compounds is the same as their apperceptive comparison. The two are to be held completely apart. Of course, there must be agreements and differences in our psychical processes themselves, or we could not perceive them; still the comparing activity by which we perceive is different from the agreements and differences themselves and additional to them."[10] I am inclined to add one more acceptance of the 'erroneous view.' Surely in psychology, if anywhere, the 'being' of a thing is its 'being experienced.' What can a change in consciousness be which is not also a consciousness of change? Külpe's words settle very well with this idea: "The phrase 'sensible discrimination' must not be taken to

[7] 'Manual of Psychology,' Bk. I., ch. 2, sec. 2.

[8] Bain, 'The Senses and the Intellect,' 3d ed., p. 321. Sully, 'The Human Mind,' Vol. I., chap 4, sec. 3. Spencer, 'Principles of Psychology,' Vol. II., chap. 24, sec. 371. *Ibid.*, sec. 373. *Ibid.*, chap. 25, sec. 374.

[9] 'The Human Mind,' Vol. I., chap. 7, sec. 3. *Ibid.*, footnote.

[10] 'Outlines of Psychology,' Pt. III., sec. 17, par. 6.

denote a faculty of comparison, in the sense of a peculiar conscious process existing alongside of the various contents.'"[11]

There are two especially noted discussions of the way in which the consciousness of change comes about, those of John Stuart Mill and Professor James. In Mill's experimental methods for the selection of the cause of a given effect we have four or five groups of circumstances in which the same principle may exhibit itself. The selection of the 'sole invariable antecedent' is the problem. But when we are told to regard as the cause that which is always present when the effect is present (and absent when it is absent) we must presuppose several already distinctly discriminated antecedents, that is, we must have some pretty definite preconception of the possible causes or antecedents before we could know whether any one were always present. Mill's methods would apply, therefore, only to specially arranged cases. James attacks the question in the two complementary phases of 'dissociation by varying concomitants' and 'association by partial identity.' Each of these formulas, in spite of its value from a descriptive point of view, seems inadequate as an explanation, since it is expressed in terms of that which it purports to explain. In the 'varying concomitants' the discriminations which we wish to know about are already given. The variation is the question. In 'association by partial identity' it is the partition which is the object of the inquiry.

In every case of discrimination there are two aspects of consciousness, a 'this' and a 'that.' It is often tacitly assumed that these two members of the discrimination are coordinate particular impressions, and that what we distinguish is one particular thing from another particular thing. To this understanding of the matter I venture to take exception. We do not discriminate from particular to particular, but from the general to the particular. It is a singling out or distinction of one point from all others, a dichotomy of which one term is the object and the other is a vague feeling which is a generalization of all possible other things. Discrimination is always for something as against something else, and the two terms are never equal. This process appears as a change from the general to the special, or from the felt to the clearly perceived. It is illustrated by the familiar experiments which deal with least discernible differences. We may feel that two tones are different, but be unable to say which is higher; two grays feel different, but we can not tell the lighter; something moves on our skin, but we do not know the direction of movement. In all these instances the general experience precedes; we know that one gray is lighter than another before we know that

[11] 'Outlines of Psychology,' Pt. I., chap I., div. 5.

this gray is lighter than that. Again in waking from sleep, no matter what the stimulus that aroused us, it seems that we feel first the general excitation of being awake before we realize any particular sensation. "The first appearance of a deluded belief," says Mercier, "is always strongly associated with either pleasure or pain. It is always the constituent of an emotion."[12] In voluntary discrimination, as when one is required to tell the difference between two tones, the first condition is the anticipatory imagery, and this imagery is necessarily vague and general. We can not anticipate precisely what we are going to hear, we only know 'about' what it will be. This knowledge about is the diffused excitement which is called a feeling for the thing.

It follows that feeling may be looked on as an instrument of control over discrimination. Although it is said that we can govern our thinking better than our feeling, the fact seems to me just the reverse. We can work up ideational excitement, but we can not compel perception. It is easier to expect a thing than to get it. We can melt up the wax, but the impression has to be given. An emotion is more accessible to control than an idea because it is commoner. It is largely made up of muscular stimulation and that is the very source of experience over which we have most immediate command. As an athlete who wishes to make a quick or fine reaction first warms up his general excitability, so the would-be discriminator must excite some feeling or general susceptibility to his subject.

Through the medium of this common excitement transitions take place from one special object to another. The reabsorption of the particular into the general—the result of fatigue perhaps—is the middle term to the appearance of another particular. All comparison between particulars must be mediated by a common denominator. There must be some reduction to a common effect or else the comparison of one sensation with another can have no meaning. Now, in comparing a somber color to a low tone, we do not hesitate to say that the common effect is a certain feeling; and when Shelley compares a skylark to a cloud of fire we hasten to explain by emotional congruity. Why, then, may we not consistently define the mean between any two extremes as the emotional or affective element in our situation, and admit that while we are discriminating a blue from a green with attention now on one and now on the other, we are moved by a blue-green emotion?

Such an understanding would agree with the view advocated by Külpe, Titchener and others that the variety of our intellectual content is contributed by the sensational part, compared with which the

[12] 'Psychology Normal and Morbid,' p. 479.

affective elements are most meager. Only, it would hold that feeling is relatively, rather than absolutely, simple. Our view would also agree with the theory of Wundt and others that there are many different feeling qualities; for since no two situations are exactly alike there is an opportunity for many different middle terms. In any given moment of consciousness, then, the homogeneous aspect, the middle ground, is the feeling aspect; but in retrospect these homogeneities need not be, indeed, are not, the same.

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THE REAL AND THE PSEUDO PSYCHOLOGY OF RELIGION

THE psychology of religion, unfortunately for its development as a science, has become somewhat of a fad. It is the thing, now, for theological schools to offer courses upon the subject, and, in various ways, a deal of more or less wild discussion, so labeled, is bandied about and occasionally appears in print. Much of it is obviously mere philosophizing about religion, and is as remote from genuine psychology as can well be imagined. It seems to be an attempt to utilize in a very external way some common psychological terms in the restatement (we shall not say explanation) of the concepts of the religionist. The psychology of religion has too often been undertaken from a religious point of view with the evident intention of giving religion a sort of pseudo-scientific dignity. In fact, a little going over of the field of what to-day claims to be the psychology of religion must render it manifest that we are not yet beyond the stage when terms must be defined and the nature and scope of the subject-matter more carefully determined.

Two or three elementary principles must be clearly grasped by any one who aspires to be a psychologist of religion. In the first place, one must not take for granted the concepts of the religionist and use them along on the same level with psychological terms. All such concepts as God, divine life, or larger life, conversion, etc., may be assumed to stand for some facts of experience of the religious mind. It is the business of the psychologist to determine what these facts may be and restate them in psychological terms, not use them unanalyzed and in their popular sense.

For another thing, the psychologist must be able to distinguish a psychological statement from a metaphysical one, or a statement of fact from a vague philosophical generalization.

With the first of the above principles in mind, the psychologist will see that the various conceptions of religion grow out of certain valuational attitudes in religious individuals. This is entirely aside from the question of their objective truth or falsity. The mere fact that they are beliefs of some people means that there is something in the experience of these people which these concepts stand for, or symbolize. But while these concepts refer to facts of experience, it is important to note that they are not facts which belong to the same species as perceptions. The religionist may say that he perceives God as clearly as he does a house, but he speaks popularly and not scientifically. What he really means is that he is conscious of a certain value in his experience, a value which is as vivid to him, so he thinks, as the perception of an external object. The metaphysician and the practical religious individual may quite believe that God exists as an objective fact, and they may offer proof that is to them convincing. Psychologically, however, God is not perceived, nor can the divine mind be regarded as something in some way continuous with the experience of the psychologist through its subconscious phases. God may be an existing fact, but even the religious man would hardly claim that his deity was a phenomenon, and hence capable of statement in phenomenal terms. If there is a divine mind, its relationship to the human mind can not be expressed in any spatial or temporal terms, nor in terms of cause, nor in any other thought category. In other words, however the naïve mind may choose to symbolize that relationship, it is not a relation of which psychology can take any cognizance. As far as psychology is concerned, the deity may be said to be a value attitude of a certain kind in the consciousness of some individual or individuals.

The following considerations will make this point of view clearer. Experience as it comes to us, or as we have it, is not merely an epitome of seemingly objective facts. The so-called facts of our experience come to us with a color; they have a certain appeal to us. In other words, the stream of consciousness has its values as well as its images, its ideas and its perceptions. Religion may be said to pertain to the value side of experience. In religious dogmas, concepts, objects of faith, deities, etc., the religionist states in objective terms what experience means to him.

One of the objects of the psychology of religion is to trace the development of these religious values out of the simpler types of value attitude, and to state in terms of the rest of experience the counterparts of such objective expressions of value as God, immortality, faith, the divine life and the like. In other words, if psychology is concerned with a description of the facts and laws of consciousness, and if the psychology of religion is a subdivision

of this more general science, it deals, simply, with a certain portion of the conscious contents and activities which are the subject-matter of general psychology. It must state in the accepted language of psychology the nature of those conscious states which are called religious.

This brings us specifically to the second point, referred to in the beginning of our discussion. Psychology has to do with the content and the dynamics of the *individual* mind. To be sure this end can be attained only by taking account, for one thing, of stimuli of various kinds, especially of social stimuli, but in no case does this fact render it legitimate to assume that there is an over-soul or divine life of which the individual is a part. It may be legitimate for philosophy to speculate regarding such a state of affairs, but the whole question is one which is at least not psychological.

The psychologist has given, we repeat, an individual consciousness capable of being modified by various stimuli, but it is not, as far as he is concerned, a part of a larger life, either social or divine. As far as the individual consciousness is concerned, these are simply terms which symbolize immediately experienced values of various kinds. As we have already suggested, it is the business of the psychologist to endeavor to state the objective conditions under which these value attitudes arise. This is true, whether the value be esthetic or religious. It should be evident, however, that these conditions can not be explained through the use of the value terms themselves. Thus the consciousness of esthetic value is not by any means accounted for by saying that the person perceives a beautiful object. So also the religious consciousness is not explained by the statement that the soul in some way perceives, or is cognizant of divine values. We maintain that *both the esthetic and the religious consciousness are constructions, and the so-called objects of these types of consciousness are their products, as far as psychology is concerned, rather than their stimulating causes.*

The above considerations suggest the type of objection we should urge against such a statement as the following: "If there is a divine life over and above the separate streams of individual lives, the welling up of this larger life in the experience of the individual is precisely the point of contact between the individual person and God. The organizing center for religious as well as social life lies beyond the boundary line of the merely individual consciousness."[1] This is a pseudo-psychological explanation of the experience of con-

[1] "The Psychology of Religion," J. D. Stoops. This JOURNAL, Vol. II., p. 512. This paper is not an attempt to criticize the article referred to and except where explicit reference is made to it, I do not have it in mind, except in a general way.

version. If we translate it into genuine psychological concepts, the meaning implied seems to be something like this: The significance of the experience of the moment is not comprised in its bare factual presence, that is, as it appears superficially. The experience of the moment comes in a certain context of habit, its present structure is strictly relative to innumerable previous experiences of the individual. No experience can be completely described by its central fact or focus. Sometimes we are more conscious of the setting of appreciation, value, worth or significance, whatever we may call it, than at others. In popular language we may say that there is then 'the welling up of a larger life,' of a social consciousness, or of a divine consciousness, but, in the language of psychology, that which 'wells up' is an accumulation of subtle value attitudes, and habits which are definitely related to our previous experience and are developed out of it and *it only*.

In saying all this, the psychologist need not dogmatically assert that his description of the structure of experience, its contents and its values, is an exhaustive one. It is quite likely that every fact of consciousness means more in the ultimate constitution of things (whatever that may be) than we can ever state in our descriptions, but as far as psychology has anything to say about it, the description is complete when it has been made in terms of the experience of the individual, taken in its entirety, and not as a fact of the present moment. In the ultimate constitution of things this may be the contact of the individual person with God. The broader relationships of the present moment may be so vivid in consciousness, their significance for the life as a whole may be so great that they may merit the objective symbol of *divine* or of *God*, but from the point of view of science *the experience is still a 'value attitude'* arising as an organic part of the stream of consciousness of the individual.

Such statements as that above, to the effect that the subconsciousness of the individual is continuous with the consciousness of society or a divine consciousness, are metaphysics or guesswork; at any rate they are not psychology. If conversion is the rising up of a new center out of some subconscious region, it is at most a reorganization of one's life by taking into account its broader meanings and values as these are present in consciousness in the form of emotional attitudes sublimated from previous experience.

The writer quoted above makes much of the automatisms of conversion and of their supposed frequency at adolescence as proving that it is the outburst from beneath of the deeper life of the race, then, for the first time, making itself felt. That conversion involves a marshaling of subconscious factors is evident enough to

any one, but that it is, therefore, 'the welling up of a race-life' is the grossest mythology. The only thing brought to light by the facts to which he points is that many adolescents are extremely suggestible, and that under a certain type of influence, such as that afforded by some of the evangelical churches, their vague impulses are, through suggestion, given definite form. The organization of one's impulses in this manner may be so striking and sudden as to seem to the subject like the bursting upon him of a larger life. It *is* a larger life, if it brings him to a fuller consciousness of the significance and interrelation of the facts of his experience. He may, as a result, have a better organized individuality, but it is, mind you, his *own* personality, changed in some direction or other by suggestion, rather than any racial life showing itself.

Discussions of conversion, such as that referred to above, seem to ignore the fact that their conclusions are based on a very limited and selected type of youths, and that outside this class, that is, in the case of the average youth who does not come under a certain kind of religious teaching, conversions do not occur in any appreciable degree. How could this remarkable lack be explained according to the hypothesis we are criticizing except by the admission that in some youths the life of the race does not 'well up.' The fact is that conversion is *not* a universal nor a particularly natural experience (the question is begged, if it is urged in reply, that conversion may be gradual if not sudden, and hence may well be universal), but an induced one. The same is almost certainly true of the so-called 'storm and stress' of adolescence. We repeat that to call it the surging up of the larger life of the race is something other than a psychological statement.

The psychology of religion should, then, investigate the concepts, emotions and attitudes of the individual which are commonly called religious, interpreting them in relation to the other facts of consciousness. For the psychologist, God is not a postulate nor a factor in the production of the religious life. He is one of the concepts of some religious lives, and as such needs explanation. So of all the other objects with which the religious mind constructs or describes its universe of values.

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PANPSYCHISM AND MONISM

PANPSYCHISM appeals to our sympathies in many ways, but in none more strongly than in its claim to have given a monistic solution of the psychophysical problem. In place of the two

streams of mental and physical events, paradoxically sundered and still more paradoxically parallel, panpsychism puts a single reality mental in its nature, and of which the physical order is the symbol or phenomenon.

At the recent congress of philosophers at Geneva M. Flournoy criticized the panpsychists on the ground that the monism which they propound is methodologically useless because it is merely verbal. The puzzling duality of physical and psychical is in no way overcome by calling the one reality and the other phenomenon. From the standpoint of common sense and practical life, says M. Flournoy, we shall continue to treat mind and matter as interacting substances quite in spite of our inability to explain how interaction between two such disparate entities is possible. From the standpoint of science, on the other hand, we shall continue to treat psychical and physical as mutually exclusive but parallel streams of phenomena, and this again quite in spite of our inability to explain how two such disparate orders of events can be parallel. These two forms of dualism, with all their objections and regardless of the many refutations that have been leveled against them, continue to flourish *because they are methodological necessities* from the standpoints, respectively, of common sense and of science. The three forms of monism which would supplant these dualisms are: (1) materialism, (2) panpsychism and (3) agnosticism, or the doctrine that both physical and psychical are phenomena of an unknown substance. With these views considered merely as unproved metaphysical theories M. Flournoy has no quarrel. What he does very strongly protest against is the claim that any one of them is in any sort a remedy for the interaction paradox of the common-sense attitude or of the parallelism paradox of the scientific attitude, or in any way a mediator between these. The panpsychist does not give any satisfactory answer to his self-imposed question, 'Why has the mind a body?' because he can point to nothing in the psychical series that in any way helps us to conceive how the physical series could depend upon or originate from it.

In his reply to M. Flournoy's criticism[1] Professor Strong attempts to give a specific answer to the question which he and other panpsychists are rightly accused of having left unanswered—the question of why the mind has a body—or (to formulate the question from the standpoint of panpsychism): *How is it that minds come to attribute to one another bodies which they do not really have?*

His answer, if I understand it, runs somewhat as follows: Assume

[1] Both criticism and reply are printed in the *Archives de Psychologie*, Nov., 1904.

the system of bodiless minds in which the panpsychist believes, and assume, furthermore, that these minds act upon one another and tend to evolve ever more favorable variations. Now in this system it will be very strongly to the interest of any evolving mind to know its fellows representatively and symbolically rather than directly and as they are. And as the symbols or ideas become more efficacious they will *pro tanto* become more unlike the realities to which they refer. Thus by a kind of natural selection we should expect those minds to survive in the struggle for existence who had best attained the faculty of knowing other minds in wholly unmental terms. The physical conceptions which we actually have of the external world are seen to be precisely what would have arisen if such an evolution had actually taken place. We might add that the animistic view of nature which is held by savages and children denotes a stage of development intermediate between the primeval type of knowledge and the type of knowledge of the modern mathematical physicist. The atomistic and mechanical conception of the latter is perfectly effective for predicting and controlling nature simply because its symbols are so completely denuded of all resemblance to reality. Thus we may understand why and how it has come about that each mind appears to its neighbors to be clothed with a body and to exist as a physical object in space.

This hypothesis of Professor Strong's, of which I have here given the merest outline, should be welcomed by all panpsychists. It is a new and daring explanation of the genesis of the physical from the psychical. It appeals strongly to the sympathies of our day by reason of its use of biological categories. The experience of the physical world is a survival of the fittest. It is a useful illusion, a veil which keeps us from being blinded by a too intimate view of the souls that surround us. Berkeley, when facing the same problem which M. Flournoy presents to Professor Strong, was compelled to invoke the Deity to account for the phenomenon of purely physical ideas inhering in a purely psychical being. Professor Strong, like Laplace before him, has no need of that hypothesis—the principle of natural selection takes its place. His new theory is indeed nothing less than the Darwinization of Berkeley.

Yet with all its attractiveness this view seems to me open to an objection, which should be fatal to its acceptance. The biological principle of natural selection applies only to the *survival* of a variation, never to its *origin*. Unfortunately, the present problem is purely a problem of the origin of the physical and not at all a problem of its survival. Professor Strong's appeal to evolution would consequently seem to be irrelevant to the issue which he is called upon to meet. Supposing, however, that it is urged in answer

to this objection that all problems of origin are unsolved and that this evolutionary panpsychism is a step forward in that it is a reduction of the mind-body puzzle to a special case of a more general biological problem? I should reply that there was a profound difference between the unknown manner in which a new organic variation originates and the unknown manner in which a physical experience originates from a psychical. For the biological variation is at the worst nothing more than a new arrangement or structure of material elements which were formerly present, while the genesis of physical from psychical involves the appearance of a totally new *quale*. What, for example, should we say to a materialist who should argue that because an animal evolved a stomach that could digest so likewise he might evolve a brain that could feel and think? Yet the same difficulty that prevents us from assenting to the view that sensation is a phase or result of molecular motion in the brain should equally prevent us from assenting to the converse statement that molecular motion is a phenomenon which has resulted from sensation. Anything that would enable us to cross intelligibly from psychical to physical would enable us to cross from physical to psychical. For these reasons I can not feel that Professor Strong's new theory is any genuine answer to the criticism of M. Flournoy. Once grant to the idealist the psychical origin of a physical experience and we can understand its development by natural selection into an elaborate system of atoms and molecules. But the whole difficulty lies in granting this first origin.

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DISCUSSION

DR. BUSH'S DEFINITION OF CONSCIOUSNESS

DR. BUSH in his 'Empirical Definition of Consciousness'[1] handles idealism in an easy, almost disrespectful way that must excite envy in those of his readers to whom the source of his confidence is not as clear as to him. Hence this note of interrogation.

Dr. Bush corrects the idealistic assumption that the subject of consciousness, the knower, is never an object of consciousness. Where a knower exists it is one among the objects of consciousness,

[1] JOURNAL OF PHILOSOPHY, PSYCHOLOGY AND SCIENTIFIC METHODS, Vol. II., pp. 561 ff.

the body, *e. g.*, or some part or action of it. And, where 'you, I and the chair,' *e. g.*, are all objects of one sensation, 'that identical chair may be your object and my object'; it is then 'essentially public.' On the other hand, hallucinations and dreams, and in part at least, I suppose, a feeling as of hunger or thirst, which are not objects in a world of experience where I and the rest of us stand in similar relations to them, these are private objects. This distinction is 'strictly empirical'; and idealism, since it is based on the essentially private character of *all* experience of objects, 'dissolves away like the architecture of dreams.'

But it seems to me that, though we grant that the subject of consciousness is ever an object also, yet when we turn to the meaning and test of the distinction between truth and error, Dr. Bush himself shows that the way to idealism and the absolute is just as open and easy as before, so long as we speak of *private objects* 'streaming' (even though they do not 'exist') in consciousness (p. 567). For when he says that 'the actual test whether my visual object be chair or hallucination would be to find whether you too see what I do,' and that 'error in science is the fact of rejection by other observers,' he starts with the existence of a private object (visual or other, mine or another's) and asks whether it be public or private only. So that, with this private object as the grammatical and logical subject of the inquiry, whatever predicate (hallucination or reality) may be found for it, to it alone existence, within the range of the inquiry, can primarily pertain. Hence may easily follow the conclusion that 'true' existence, whatever *test* we apply, *is* and means the private experience of an absolute.

Is not the distinction between private and public objects just the distinction between consciousness of an object and the object which Dr. Bush starts by rejecting? Is not my dream, in so far as it is an object, public in the same sense as the chair, though it is not studied by me and by others in the same way, while all may, if equally near, etc., study the chair in the same way?

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REVIEWS AND ABSTRACTS OF LITERATURE

La Valeur de la Science. H. POINCARÉ Paris, Ernest Flammarion. 1905. Pp. 278.

A hopeful sign for present-day philosophy and psychology is the persistence with which the common sense of the *οἱ πολλοί* is steadily creeping into the somewhat attenuated and rarefied regions of academic

thought. Emphasis even in philosophy is being placed more and more upon the scientific treatment of data, upon the tentative character of our knowledge and hypotheses, and upon the possibility of the widening glimpses which may be had in the realms of experience. To quote Tennyson in this connection,

> "Yet all experience is an arch where thro'
> Gleams that untravell'd world, whose margin fades
> For ever and for ever when I move."

M. Poincaré well illustrates this empirical tendency in his small volume. I should hesitate to call his book 'pragmatic,' still I think that its general tendency is in that direction. It may be advisable, therefore, to orient any possible reader by pointing out the 'pragmatic' tinges in it before touching upon the contents in general. I have, in the following quotations, italicized the words that indicate the pragmatic tendency.

Concerning time and space we are told: "It is not nature which imposes them on us, it is we who impose them on nature, because we find them *convenient*" (p. 6). "The law of Newton is a truth of experience; as such, it is only *approximate,* and shows us that as yet we have only a *tentative* definition. . . . There is only one way of measuring time, which is truer than any other; that which is generally adopted is solely that which is most *convenient*" (p. 44). Moreover, any affirmations one way or the other in this connection can have no meaning *per se.* "They can have meaning, only through *convention*" (p. 46). Similarly concerning scientific rules. "We choose rules, not because they are true, but because they are the most *convenient*" (p. 57). The three dimensions of space, so-called, are not such *per se.* "Experience does not prove to us the three-dimensional character of space; rather it shows us that it is *convenient* for us to attribute three dimensions to it, because by this means any possibility of error is reduced to a minimum" (p. 125). Concerning science, we do not say that it is useful because it teaches us how to build machines. Rather "machines are useful because they do our work, and so enable us to spend more time at scientific investigation" (p. 166). To which I may add that, therefore, science is useful because it enables us to do our work in a more expeditious and agreeable manner. Our basis in all cases is experience. "The scientific fact is nothing more than the brute fact translated into more *convenient* language" (p. 231). Again, "Every law is only an imperfect and *provisional* formulation which must, in the future, be replaced by another higher law, of which, at present, we have but the roughest conception" (pp. 251, 252).

So much for these spots of light. Concerning the contents[1] of the

[1] Contents are: Part I., The Mathematical Sciences: I., Intuition and Logic in Mathematics; II., The Measure of Time; III., The Notion of Space; IV., Space and its Three Dimensions. Part II., The Physical Sciences: V., Analysis and Physics; VI., Astronomy; VII., History of Applied Mathematics; VIII., The Crisis in Physics; IX., The Future of Applied Mathematics. Part III., The Objective Value of Science: X., Is Science Artificial? XI., Science and Reality.

book in general, the variety of subjects is somewhat too great to be adequately treated. M. Poincaré, however, writes in a most concise manner, and, unlike the average Frenchman, is no easy reading. His remarks are pointed, and his whole treatment is rather a series of careful analyses, than a systematic and connected treatise. As the table of contents shows, the outline of topics is rather ambitious for so small a volume.

In contrasting the values of intuition and logic, M. Poincaré asserts that the former does not give us certitude, while the latter does, and hence the emphasis upon the latter in scientific demonstration. It seems to me, however, that intuition is the basis of all reasoning, affording us the halting-places in the upward passage of logical advance. The verbal and other symbols have no meaning without the 'set' given them by the attitude which accompanies them, without the intuitional response acting as a step of the ladder in the progress of the thought concerned. And concerning the certitude of the intuitional or 'geometrical' method in mathematics, surely Newton's *Principia* are just as valid as the more 'logical' treatment of Leibnitz.

In the treatment of space, we find an original discussion of the continuum in its various dimensions. Space, as a pristine experience, is amorphous. Upon this as a basis, we develop the various continua. In brute experience, we may be unable to distinguish, in a physical continuum, two impressions, while we may be able to tell each of them from some third, higher or lower in the scale. For example, while we may be able to distinguish 10 *gr.* from 12 *gr.*, still 10 *gr.*, 11 *gr.*, 12 *gr.*, etc., may not be so distinguishable. This gives us some idea of a continuum in our original experience. As a *felt* experience, we may express this by the formula,

$$A = B, \quad B = C, \quad A < C,$$

thus symbolizing a continuum as experienced. We may, however, have a continuum of one or more dimensions, and here the notion of division, breach or break must be introduced.

We may represent the parts of a physical continuum by

$$E_1, E_2, \cdots, E_n,$$

which is so *experienced* that (1) all the parts are felt as belonging to the continuum, and (2) each is indiscernible from the following. When, to divide a continuum, it is necessary to consider as a break a number of elements indiscernible from one another, we say the continuum is of one dimension. If, however, the break consists of a system of elements forming among themselves a number of continua, we say the original continuum is of many dimensions. When the break forms more than one continuum, the original continuum is of two dimensions. If the break is a continuum of two or more dimensions, we say the original continuum is of three dimensions; and so on. In plain English, a linear continuum in space is one which may be broken by a point, a plane continuum one which may be broken by a line, a volumetric continuum one which may

be broken by a plane; and so on. Concerning the psychology of space, this is explained in the usual manner, emphasis being placed on the motor adjustments.

The treatment of the physical sciences is rather cursory, as one might expect from the amount of space devoted to it. The empirical and tentative character of our various laws is shown, so M. Poincaré states, in the changing values and new interpretations necessary for the various principles, those, among others, of Carnot, Newton, Lavoisier, Mayer, etc.

The latter part of the book (Part III.) is taken up with a criticism of a certain M. le Roy, while at the end of the book, science is defined as 'a system of relations' (p. 266). Science does not lead us to know the true *nature* of things, but rather the true *relations* of things (p. 266).

I have attempted to touch upon only certain more or less interesting parts of the book in a suggestive manner. It requires close reading and rereading to get all there is out of it. And the large field which it tries to cover presupposes a varied and extensive knowledge at the start.

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Esquisse d'une théorie biologique du sommeil. E. CLAPARÈDE. *Archives de Psychologie.* Tome IV., 1905. Pp. 245–349.

The various physiological theories of sleep are first reviewed, some of which are classified by the author as 'hypotheses of mechanism,' others as 'autonomous theories.' Under the former head falls the widely accepted theory of *cerebral anæmia,* well known from the writings of Mosso, Howell and others; likewise the directly opposed theory of *cerebral hyperæmia.* In the same class, also, is placed Duval's ingenious hypothesis of the *retraction of the neurones,* according to which sleep and other dissociative mental states have for their cause a severance of continuity in the neural paths, resulting from a retraction of the dendritic processes. Against these and some other views which he cites, the author offers the following general criticisms:

1. The supposed facts upon which the theories are based are not sufficiently well grounded, and the testimony of various writers is in some cases quite contradictory, as witness the uncertainty whether the brain is in a condition of anæmia or hyperæmia during sleep. Recent histological studies (*e. g.,* those of Apáthy, to which no allusion is made) have likewise discredited the retraction hypothesis.[1]

2. These phenomena, which are adduced as *causes,* might just as well be regarded as the *effects* of sleep.

3. Even supposing these phenomena to be in reality the immediate causes of sleep, we are not told *why,* for example, these changes in the circulation occur, or *why* the retraction of the neurones, etc.

[1] Temporary *functional* interruptions in the continuity of nerve paths must, however, be assumed, almost of necessity; and such functional interruptions would, of course, furnish as good a physiological basis for sleep as the temporary *organic* discontinuity of Duval's hypothesis.

The '*autonomous*' theories, on the other hand, 'regard fatigue, *i. e.*, the wear and tear of the tissues produced by the activity of waking life, as the efficient cause of sleep; sleep is itself considered as a phase of organic regeneration; it is, then, in its turn, the condition of the state of waking which succeeds it.' Such theories are thus self-sufficient, or 'autonomous,' so far as they go. There are two classes of hypotheses here to be noted, one of which assumes the exhaustion of certain substances necessary to the normal life of the organism, these being restored during sleep; the other assumes a condition of *auto-intoxication* (*e. g.*, the 'autonarcose carbonique' of R. Dubois).

To the hypotheses of this class Claparède offers a truly formidable list of objections, in presenting which I have not followed strictly the author's own mode of arrangement. (1) It is not justifiable to confuse various artificial states of stupefaction with sleep proper. (2) May not the increase of CO_2 in the blood (shown by Dubois to occur in hibernating animals) be the *effect* rather than the *cause* of sleep? (3) There is no parallelism between the degree of exhaustion and the amount of sleep which ensues, as witness the case of insomnia. (4) The alternation of sleeping and waking ought to conform to a periodicity of much briefer phases. At the moment of going to sleep, our processes of destructive metabolism have, *ex hypothese,* reached a point *just sufficient* to produce this effect. Why, then, does sleep last so long? The process of recuperation (or of elimination) should bring us to the waking level in a very short time. Thus the rhythm should be more like that of respiration, the beat of the heart, etc. (5) The toxic conception is anti-physiological. We experience none of the baneful effects of narcotization; on the contrary, there is a trophic, or reparative, action during sleep. (6) Interest, volition and suggestion play an important part in hastening or retarding sleep. (7) How explain the effects of darkness, monotonous stimuli, etc.? (8) We may go to sleep almost instantly, and display a complete mental lucidity almost immediately after waking. (9) The sleeper remains alert and responsive toward certain sounds, having a special *meaning* to him. How could a narcotization of the brain have such a discriminating effect upon the mental reactions? (10) The form of the curve representing the depth of sleep at different hours of the night does not conform to that which we should expect if we had to do simply with recovery from fatigue or the elimination of poisons. (11) Diverse biological considerations: Why are some animals, *e. g.*, the cat, able to sleep at any time of night or day? Why do birds sleep for so short a time, especially in view of such prolonged activity? Why do some other animals sleep so very lightly? Why do some sleep regularly in the daytime and others at night? How account for the duration of hibernal sleep? (12) Pathological facts: insomnia of maniacs, who are constantly in movement; case of Siamese twins, who slept in some measure independently of one another, etc.

As a substitute for these various physiological theories the author proposes his own 'biological' theory, *biological* because it regards the subject from the view-point of the total organism. Sleep, he tells us,

is not a mere cessation of activity—it is a 'positive function.' This general attitude, he acknowledges, is not original, having been clearly stated by a number of other physiologists and psychologists, *e. g.,* Janet and Myers.

Sleep is not the effect of exhaustion, but forestalls and wards off exhaustion. "It is not because we are poisoned or exhausted that we sleep, but we sleep in order not to be." Thus sleep frequently occurs without there being any other symptoms of fatigue. This lack of proportion between the cause and the effect is what distinguishes a positive activity (reflex or instinctive) from the passive result of a physical or chemical agency. For it is with instinctive and reflex actions, we are told, that sleep must be classed. Specifically, it is an 'instinct of defense.' Thus it is subject to what the author terms 'the law of the interest of the moment,' *i. e.,* the supremacy, in case of conflict, of that instinct which is momentarily of most importance to the organism. This is the explanation, he believes, of various facts which are unintelligible according to current physiological theories. To keep awake, when occupied with important business, is merely an example of the momentary suppression of one instinctive tendency in favor of another.

The discussion of the 'stimuli of sleep' (for sleep, like any other instinctive act, is provoked by stimuli) brings forth some interesting problems. The relation of darkness to sleep would seem at first to be a simple and direct one; and indeed the withdrawal of visual stimuli generally predisposes the organism to sleep. But we have nocturnal animals, which sleep by day, and others, such as cats and dogs, which sleep regardless of the hour of day or night. These cases are all readily intelligible when regarded as adaptations to particular modes of life. The notion of the time of day, or rather of the interval which has elapsed since we last slept, is one of the main factors in determining our going to sleep; and, similarly, as we all know by experience, the duration of our sleep is frequently determined with great exactness. The author cites the case of an orang-outang which slept from six P.M. till six A.M., while in Java, but which, on being borne westward, on its way to Europe, 'gained time' like a chronometer; so that its period of repose was from two P.M. till two A.M. at the Cape of Good Hope!

Hibernal sleep, according to Claparède, is a real sleep, comparable with and historically derived from ordinary sleep. The instinctive character of sleep in general is particularly well exemplified in this phenomenon. Hibernation is not the physiological effect of a lowered temperature, for the latter fails to produce this effect unless the organism is favorably predisposed. This predisposition is largely a matter of the nutritive condition of the organism. Reduced temperature may, however, act as an immediate stimulus to hibernal sleep. The biological significance both of hibernation and æstivation is the fact that the animal is thereby enabled to escape starvation during a period of inadequate food-supply. In this respect it is comparable with the migration of birds. Historically, it is 'the consequence of the habit, contracted by certain mammals [animals] of passing the winter in a hiding-place where they

have stored their provisions.' The vitiated atmosphere of the place of seclusion may be a contributory factor, but the increase of carbon dioxide in the blood (affirmed by Dubois) is not the primary cause of the phenomenon. Many readers will doubtless be surprised to learn that the poverty-stricken peasants of certain parts of Russia are wont to pass into a hibernal sleep which may last interruptedly for several months (Volkov).

As to the 'mechanism' of sleep, the author accepts the view that it is a phenomenon of inhibition, which he picturesquely terms a 'psychological suicide.' It is a 'reaction of disinterest for the present situation.' It is not, however, a complete suspension of our 'psychism.' The phenomena of *irritability* persist, but the *reactivity* is temporarily annulled. Against the vaso-motor theories of sleep, he remarks: "I do not see how, by a simple vaso-motor mechanism, one would be able to realize the delicate attentional selections which obey the law of the interest of the moment." It may be rejoined, however, that these same 'delicate attentional selections' are equally difficult to understand on the author's theory of inhibition, which is based upon Verworn's conception of the latter as 'the predominance of assimilation over disassimilation.' The mechanism of sleep, whatever it is, must be as complex as the phenomena to be explained.

Strictly speaking, there can be no 'center of sleep,' the author says, for, as in the case of other instinctive actions, many parts of the brain are concerned simultaneously.

The restorative effects of sleep are due, first, to the enforced *repose,* and second, to the increase of the *trophic* processes in general—this in spite of the fact that the activity of the viscera is lowered.

The author's assignment of a specific 'function' to *dreams,* especially a function so far removed from racial self-preservation as the conservation of our early memories and the exercise of our unbridled fancies, is calculated to startle any one who has followed the trend of recent evolutionary speculation.

Historically, Claparède regards sleep as an acquired function, a contingent rather than an essential phenomenon in the living world. Few comparative studies have been made, but so far no indications of sleep have been found in the Protozoa, and even in some birds it is almost lacking. Indeed, there is no *a priori* reason for assuming the universality of sleep. It is necessary, in a given case, either (1) if the organism expends itself more rapidly than it repairs itself; or (2) if the toxic waste products are eliminated less rapidly than they are formed. Neither of these conditions is a physiological necessity, however.

The author offers two hypotheses as to the phyletic origin of sleep, but he does not commit himself definitely to either view:

1. Sleep was primarily a phenomenon of exhaustion, but became, secondarily, an active inhibition, through the operation of natural selection.

2. Sleep owes its origin to some other need, but the instinct was brought to its present state of development in consequence of its reparative value (here again through natural selection). Its original function

was perhaps the escape of nocturnal enemies. A comparison is here made with the familiar instinct of feigning death.

A comparison is likewise made between sleep and hysteria, the latter condition being characterized as 'an abnormal exaggeration of the reactions of defensive mental inhibition.'

A 'biological' theory of sleep (using the former word, as Claparède has done, in its narrower sense) obviously does not stand in any necessary contradiction to a purely physiological theory. Nor does Claparède make this contention. The phenomenon which is interpreted by him as an instinctive act of defensive inhibition might well have, as its proximate cause, a condition of cerebral anæmia or of hyperæmia, or the disseveration of certain neurones, or any one of the numerous other causes which have been offered in explanation of sleep. Each of these hypotheses must be disposed of on its own merits, as indeed the author has endeavored to do. A complete explanation of sleep will, however, take into consideration its physiological and chemical concomitants as well as its 'biological' significance. In the meantime Claparède has done a service by his attempt to affiliate sleep with various other biological phenomena, even though these latter are themselves far from being well understood.

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A Motor Theory of Rhythm and Discrete Succession. R. H. STETSON. *Psychological Review,* July–September, 1905. Pp. 250–270, 293–350.

The experience of rhythm in music, verse, dancing, waving a baton, or listening to a series of uniform sounds like the ticks of a clock, is explained by the subject carrying on continuous rhythmic movements. This is the extreme form of the motor theory which Stetson adopts. Other advocates of the theory have allowed some place to mental images, to tension without movement, or to organic rhythms of the circulation or nervous system. These are specifically excluded by Stetson. The paper is an elaboration of brief suggestions published in 'Rhythm and Rhyme' (Monograph Supplement of *Psychological Review,* IV., 453–466). The main purpose is to apply the theory to definite rhythms. The experimental data consist of records and measurements of voluntary rhythmic movements of the baton, fingers, and foot while listening to a sound-series or unaccompanied. The paper tacitly assumes that the movements voluntarily made will represent the conditions in the perception of rhythm when the movements are involuntary. My study of the latter makes me hesitate to accept such a conclusion. How far volition changes the involuntary group-movement remains an important question.

The analysis of the voluntary rhythmic movement-cycle is admirably done and aids materially in applying the motor theory. The movement-cycle corresponding to the rhythmic group consists primarily of a beat-stroke and a back-stroke. It is usually complicated by auxiliary movements of smaller muscles which provide the subordinate elements in the group. The action of the muscles is of the ballistic type described by Richer; one set of muscles contracts while its opposing set relaxes.

Having started the beat, the main positive set relaxes during the first half of the beat-stroke. This contraction-relaxation is the cue for the negative set to contract, as is shown by the fact that the back-stroke is not altered by the intervention of an obstacle after the contraction of the positive set. The beat-stroke changes abruptly into the back-stroke when the cue for the negative set to contract has been returned from the nerve center. The back-stroke, on the other hand, rounds off slowly into the next beat-stroke as the muscles tend to become poised. The velocity of the beat-stroke is two to three times that of the back-stroke, its duration is independent of the tempo of the rhythm and of the length of the stroke. The back-stroke alone is subject to regulation after it starts. The only rhythmic form larger than the unit-group for which the motor theory can serve is the phrase. This is not modeled after the smaller group, as has been supposed, but is a form of movement with a rise in the central part and decline at the end. In reciting verse or singing, the phrase becomes a single act of expiration. The pause after the phrase is non-rhythmical and of indefinite length. There is no priority in the genetic development of different rhythmic forms; but the dactyl resembles the trochee and the anapest, the iamb. The spondee is not recognized as a group-form. The movement-cycle in the rhythms of speech includes the diaphragm, jaw and tongue, but not the vocal cords. Pitch, therefore, has no function in the rhythm. The vocal cords are incapable of that reciprocal movement united with a sudden blow which is necessary to the rhythmic cycle.

Stetson takes issue with Meumann and McDougall as to the common classification of rhythms by their ideational content. He regards this as 'worthless.' "It is based on a hasty generalization of the relation of artistic form to artistic content, and when worked out is simply at variance with the facts. . . . The material does not war with the form and wrench it from its true proportions" (p. 252). While this contention has weight as to the undisturbed regularity of the rhythmic movement, it certainly does not affect McDougall's main point that the rhythm is weakened by the attention being attracted to factors of 'melody, harmony or rational significance.' In place of the old classifications a new one is offered on a strictly motor basis. 'Single rhythm' (verse, ticking of the clock, occupation rhythms) consists of one movement-process, contrasted with 'combined rhythm' (music and dancing) in which there are two series of movements carried on concomitantly. In music there is one series for keeping time, in which a movement is always repeated in the same way; this slow movement is accompanied by the elaborately figured rhythm of the melody which forms a distinct movement-cycle in another group of muscles. The measure differs from the unit-group in 'single rhythm' as the result of the mutual effects of the two series, the use of tempo, of tremolo-groups, and of single beats. The detailed suggestions for the interpretation of the complicated rhythms of music are a distinct advance.

The fundamental psychological problem in rhythm, why the group is experienced as a continuous unit, is held to be explained by the constantly changing tension between the positive and negative muscle sets. If the

pulls of the two sets become balanced so that the movement stops, there is a break in the rhythm. This requirement of 'actual movement' appears to me to allow too little latitude for individual differences. With some subjects a continuing tension followed by relaxation might serve to preserve the rhythm. Moreover, Stetson even excludes memory images of movement. "No succession of images which are not accompanied by actual movements can give rise to a rhythm" (p. 320). I can not see why memory should be excluded from the perception of rhythm any more than from other perceptions. It would be interesting to know how Stetson would explain the perception of rhythm when the subject observes no movement and none can be detected. He says further: "The process remains one movement just as the letter in writing, the word in speaking, the complex movements in striking a chord at the piano or turning a door-knob, are all one movement." "The muscles are all contracting or relaxing in one common wave of innervation" (p. 298). Since this holds also for the perception of a rhythm of sounds, I fail to see the force of Stetson's criticism of a statement of mine. The unitary character of the group, according to my suggestion, finds an analogy in the wave of reflex movement (not movement of one muscle, as he interprets) which results from the fusion of several successive stimuli. He states that 'such a fusion might explain the *omission* of the subordinate beats, but not their grouping.' My record of the thumb-reflex shows the crest of a large wave broken into smaller waves. This seems to best demonstrate 'one common wave of innervation.'

Use is made of the action theory of Münsterberg to explain the apparent rhythmic accent in a uniform series of stimuli. The accent occurs with a stronger movement, but the vividness of the accented element is due to the stronger efferent nerve current, not to the presence of more intense kinesthetic sensations. In speculating further as to the central process during rhythm, Stetson utilizes Holt's notion of a localization center, formulated in the study of visual anesthesia during eye movements. By supposing that impulses collected in this center discharge into a motor center at certain points in the cycle, he constructs a diagrammatic plan to harmonize the explanation of rhythmic temporal displacement, anesthesia during eye movement, maximal rate of discrete succession, and the omission of notes in a rapid series of sounds.

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Die Einfühlung und das Symbol. ROBERT M. WERNAER. *Zeitschrift für Philosophie und Philosophische Kritik,* Band 126, Heft I. Pp. 29–44.

Two important distinctions are discussed in this paper: first, and briefly, that between sign and symbol; second, that between symbol and 'Einfühlung.' The author quotes from Lipps this definition of sign: "A sign is that which tells me that something else, viz., the thing signified, exists. Smoke is the sign of fire, *i. e.,* it tells me of the existence of fire." The symbol, on the other hand, according to Mr. Wernaer, has four essential components: (1) a sensible picture, (2) an inner (seelische)

meaning, (3) an adequate embodiment of picture and meaning, (4) a lack of identity between the two, a consciousness of their duality. The third of these distinguishes the symbol from the sign. The thing signified is never incorporated in the sign. Fire is not the inner spirit of smoke and smoke is not the sensible embodiment of fire.

The fourth component of the symbol, the consciousness of the duality of sensible and spiritual elements, distinguishes symbol from *Einfühlung*. This distinction is the central problem in the discussion. Lipps, in his discussion of the symbol, had identified symbol and *Einfühlung*. "We call by the name of symbol," he had said, "that object in which we immediately experience something else, a tendency, an inner activity, in short, some manifestation of our own mental life. . . . We speak in particular of an esthetic symbol when no question is raised as to whether this inner activity or condition is really in the object." This also characterizes the *Einfühlung*, that state in which all consciousness of distinction between myself and the object is lost; when I 'feel myself into the object,' as it were; it is a state in which I am identified with the object without even raising the question as to whether there is such an identification. Mr. Wernaer's illustration may help to make the conception clearer. It runs as follows: I find in the woods a swift stream: the water leaps from stone to stone like a live thing, pursuing a definite purpose. I know not its source; it is constantly disappearing before my eyes and I know not whither it goes. I fall into a dream-like state and forget that I am standing on the bank of a stream. I seem to dream, as it were, the life of the brook that flows before me. My source is unknown. I flow hence according to the impulse of my nature; I disappear again almost before I have begun to be. 'Whence do I come?' I cry, 'and whither do I go?' and a feeling of mystery lays hold of me.

This is the esthetic *Einfühlung*, but it is not symbolism, according to our author. The *Einfühlung* may be succeeded by another state, a state which is still a part of the esthetic experience and one that is far better known to poet and artist than is the *Einfühlung* itself. In this latter state the object regains its objective character but has a new content, a content made up of the feelings which I have objectified in it. It has now a definite personality, derived from me, which lives on in it. In other words, complete esthetic absorption is not, in his opinion, the sole esthetic state. Complete loss of distinction between self and object is only one phase of the esthetic experience. The other phase is a necessary presupposition of esthetic symbolism, which, like all symbolism, requires not only unity, but a consciousness of duality.

In the opinion of the reviewer, Mr. Wernaer has made his point. The whole question is, of course, one of definition. But the term symbol is too useful in its earlier signification to warrant us in obliterating the distinction between it and Einfühlung, a word which stands for a mental state in which there is no consciousness of duality. A symbol which is not distinguished from the thing symbolized is not a symbol. Mr. Wernaer shows the reasons, historical and polemical, for the tendency

to use the term in the sense here criticized, but he shows also that they do not warrant the change.

Several other interesting points are discussed in the paper.

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Distinction entre connaissance et volonté. G. VAILATI. *Revue de philosophie,* June, 1905. Pp. 642–648.

Difference of opinion between specialists is found to a greater or less extent in most of the sciences, but it attains the extreme, perhaps, in philosophy. A thesis should, therefore, be especially welcome to philosophers, and hardly distasteful to scientific men, which would enable us to understand how two opposing views may often be equally correct. Such a thesis is advanced by M. Vailati. While it contains nothing very new, being roughly in accord with the humanistic point of view, we do not remember that any one has used that point of view to promote philosophic peace and toleration just as M. Vailati has done. The thesis is that many statements of opinion are not so much pronouncements of what is true or false as they are expressions of personal taste, ideal or interest. Thus the owner of a valuable vase or goblet will say to a guest who handles it, 'This object is fragile.' The fragility is here not an observed fact, but is a term used to express the desire of the owner for careful handling on the part of his guest. Yet a verb is used in the indicative mode, which gives to what is properly just an expression of the owner's interest the guise of a statement of objective fact. And so we often predicate of things certain properties as facts which only indicate a desired action, and are not statements to be affirmed or denied. M. Vailati does not go so far as to say this is the case with all statements, nor does he propose, even by implication, to settle all philosophic differences of opinion. He suggests only that a great many statements which have generally been considered as making part of our body of knowledge, make up rather a part of our body of will-attitudes, and, therefore, any opposition that has appeared between such statements need give rise to no intellectual quarrels. His illustration of causation in this connection is clear and good: one man says the cause of a person's death by drowning is the water in the lungs; another, his inability to swim; another, his carelessness in stepping off the pier. All are equally correct, but each emphasizes that part of the cause which his own interest suggests as the pivotal one. Or, again, the so-called 'disinterested' verdict of science is no truer than any other interested verdict, being only that verdict which best satisfies the interest of correlating all experiences into a coherent system.

Would M. Vailati be willing to carry the application of his thesis a step farther and admit that the controversy between humanists and their opponents is itself just a difference of will-attitude? And that, therefore, no quarrel need arise? It seems to us that he would, and that his suggestion might thus be most fruitfully applied to bring about peace between the humanists and those who defend the objectivity and inde-

pendence of fact. Let the humanists emphasize the influence of practical interests upon the growth of our knowledge, if they so prefer; and let their opponents emphasize the objectivity and independence of that object-matter to which the growth of knowledge leads us, if they so prefer: surely *no* interest, practical or theoretical, is satisfied by our regarding these preferences as mutually contradictory.

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Vergleichende Messung der kompensatorischen Rollungen beider Augen. ROSWELL PARKER ANGIER. *Zeitschrift für Psychologie und Physiologie der Sinnesorgane,* Bd. 37, 1905. S. 235–249.

In a recent work Delage has come to the rather remarkable conclusion that when the body is rotated around a sagittal axis passing half-way between the two eyes, the compensatory rotation of the eyeballs is sometimes less and sometimes greater than the angular distance that the body is moved through; that the rotations of the two eyes are not always equal, and may even be in opposite directions. These observations, if true, would be so important in their bearing on binocular vision that Dr. Angier has tested Delage's results. At first he used Helmholtz's three-rod apparatus, and found that the accuracy of depth-perception was virtually the same when the head was inclined at an angle to one side or the other, as when it was held upright. Also, if a straight line was continuously fixed and the head gradually inclined to one side, the image of the line became neither double nor indistinct. If, moreover, the head was turned while the eyes were shut and they were then opened on the luminous line, it generally appeared double, but the two images, so far from being crossed, were absolutely parallel. These observations cast grave doubt on the reliability of Delage's results.

Careful measurements of the compensatory rotation of each eye were made by letting the subject look long enough with one eye at a luminous point to obtain a clear after-image. He then inclined his head to one side a certain number of degrees and projected his after-image (the luminous line being removed) on to the center of a circular scale; the angle of inclination of the after-image was thus easily measured. The extreme angles of inclination were 180 degrees on each side, and the compensatory rotations of the two eyes were found to be so close as to be practically identical. The amount of rotation is also the same when the head is inclined a certain distance to one side as when inclined the same distance to the other. Of course, also, the direction of rotation of the two eyes was always alike.

Some minor observations make it probable that the amount of rotation for the two eyes at a given inclination is somewhat different according as the head has reached that inclination by being rotated through X degrees or through $360 - X$ degrees. This is almost the only point on which observations of Delage are confirmed. The paper establishes beyond any reasonable doubt the inaccuracy of Delage's experimental results.

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JOURNALS AND NEW BOOKS

MIND, July, 1905, No. 55. *Pragmatism v. Absolutism* (I.) (pp. 297–334): R. F. Alfred Hoernlé. – After pointing out the difference between pragmatism and the older forms of voluntarism, the author proceeds to a criticism of Mr. Bradley's general theory and particularly his treatment of the relation of appearance to reality. *The Naturalism of Hume* (II.) (pp. 335–347): Norman Smith. – This paper aims to show that Hume's contributions to ethics were not entirely or even mainly of a negative sort, that not all objects of action were conceived by him either as hedonic or egoistic and that reason, while subservient to the passions, had still a very positive function in building up moral conceptions. *Empiricism and the Absolute* (pp. 348–370): F. C. S. Schiller. – An elaborate and genuinely amusing criticism of Professor Taylor's metaphysics. The author points out that the numerous pragmatic elements in Professor Taylor's doctrine are wholly out of keeping with his general theory of absolutism. *Plato's View of the Soul* (pp. 371–389): Eric J. Roberts. – The soul is intermediate between the world of ideas and the world of generation. Its two prime functions are the apprehending of universals and the originating of motions. The author would have us believe that Plato shows signs in his later work of substituting for his earlier triadism a subjective monism in which the objective realms of universal and particular are reduced to mere aspects of subjective experience. *Symbolic Reasoning* (VII.) (pp. 390–397): Hugh MacColl. – A discussion and criticism of the concept of distributed terms as used in the traditional logic, to which is added a plea for the recognition, by symbolic logicians, of the plurality of non-existences. Discussion: *The Existential Import of Propositions* (pp. 398–401): B. Russell and Hugh MacColl. – Mr. Russell answers Mr. MacColl by explaining that the word non-existence has two meanings: (1) the common-sense meaning which is indefinable; (2) the conventional meaning in which non-existence is the character possessed by a class having no members. Mr. MacColl reiterates his objections to the purely 'conventional view' of non-existence. Critical Notices: E. Caird, *The Evolution of Theology in the Greek Philosophers:* R. P. Hardie. H. Poincaré, *Science and Hypothesis:* B. Russell. Dr. G. Heymans, *Einführung in die Metaphysik auf Grundlage der Erfahrung:* David Morrison. New Books. Philosophical Periodicals. Notes and Correspondence.

ZEITSCHRIFT FÜR PSYCHOLOGIE UND PHYSIOLOGIE DER SINNESORGANE. August, 1905, Band 39, Heft 3. *Zur Frage der motorischen Asymbolie (Apraxie)* (pp. 161–205): Karl Heilbronner. – An analysis of various forms of motor asymbolia gives the following classification: (1) cortical apraxia, characterized by lack of central control; (2) transcortical apraxia, characterized by lack of control of complicated voluntary movements; (3) asymbolias of guidance, characterized by confusion and interchange of movements; (4) agnosia (sensory asymbclia), including mental blindness, mental deafness, etc. *Zur Frage der*

Beeinflussung des Gedächtnisses durch Tuschreize (pp. 206–215): GISELA ALEXANDER SCHÄFER. – The course of the secondary memory image in counting or multiplying was not affected by the *Tuschreize,* a pistol-shot, except in the case of children. More recent images formed from memorizing series of colors were altered, the alteration varying with the complexity of the image to be reproduced. Primary memory images are always unfavorably affected. Literaturbericht.

Crawford, Alexander W. *The Philosophy of F. H. Jacobi.* Cornell Studies in Philosophy, No. 6. New York: The Macmillan Co. 1905. Pp. 90.

Dühring, Eugen. *Logik und Wissenschaftstheorie.* Leipzig: Thomas. 1905. Pp. xvi + 632. 12 M.

Höffding, Harald. *Moderne Philosophen.* Leipzig: Reisland. 1905. Pp. 217. 6 M.

Höffding, Harald. *The Problems of Philosophy.* Translated by G. M. Fisher, with a preface by William James. New York: The Macmillan Co. 1905. Pp. xvi + 201. $1.25.

Kronenberg, M. *Kant: sein Leben und seine Lehre.* München: Beck. 1905. Pp. xii + 409. 4.80 M.

Mach, Ernst. *Erkenntnis und Irrtum: Skizzen zur Psychologie der Forschung.* Leipzig: Barth. 1905. Pp. xiii + 461. 11 M.

Read, Carveth. *The Metaphysics of Nature.* London: Adam and Charles Black. 1905. Pp. viii + 354. $2.75.

Santayana, George. *The Life of Reason or the Phases of Human Progress.* New York: Scribners. 1905. Vol. III. *Reason in Religion.* Pp. 279. $1.25. Vol. IV. *Reason in Art.* Pp. 230. $1.25.

NOTES AND NEWS

PROFESSOR A. RIEHL, of the University of Halle, has been called to the University of Berlin, to succeed Professor W. Dilthey. His successor at Halle will be Professor H. Ebbinghaus, of Breslau.

DR. MEUMAN, professor of philosophy in the University of Zürich, has been called to succeed Professor Busse, at the University of Königsberg.

PRINCE SERGE TROUBETZKOI, rector of the University of Moscow and professor of philosophy in that university, died at St. Petersburg on October 12.

DR. R. M. WENLEY, professor of philosophy in the University of Michigan, has leave of absence for the year, which he is spending in Scotland.

THE chair of philosophy in Miami University, which was from 1888 to 1905 in charge of Dr. R. B. C. Johnson, now at Princeton, has been filled by the appointment of Elmer E. Powell, Ph.D. (Bonn).